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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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EXAMINER

JACOBSON, MICHELE LYNN

ART UNIT

PAPER NUMBER

1794

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PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No. 10/540,990	Applicant(s) KRUGER ET AL.	
	Examiner MICHELE JACOBSON	Art Unit 1794	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 09 April 2009.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-11 and 13-36 is/are pending in the application.
- 4a) Of the above claim(s) 17-36 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-11 and 13-16 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date <u>2/13/09</u> . | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Continued Examination Under 37 CFR 1.114

1. A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on 4/9/09 has been entered.

Examiner Notes

2. Any objections and/or rejections made in the previous action, and not repeated below, are hereby withdrawn.

Claim Rejections - 35 USC § 112

3. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

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4. Claim 13 is rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

5. Claim 13 recites the limitation "in which the complementary species of the barrier component are selected from polyvinyl alcohols and polymethyl vinyl ether/ maleic acid copolymers". There is insufficient antecedent basis for this limitation in the claim. Claim 1, from which claim 13 depends does not recite polymethyl vinyl ether/ maleic acid copolymers as a polymeric species for forming the barrier component. The recitation of polymethyl vinyl ether/ maleic acid copolymers also does not fall within any of the generic categories of polymers recited in claim 1, i.e. polyalkyl vinyl ethers are not recited. Appropriate correction is required.

6. Claim 13 is further indefinite for the recitation "in which the complementary species of the barrier component are *selected* from polyvinyl alcohols and polymethyl vinyl ether/ maleic acid copolymers". Claim 1 from which claim 13 depends recites "the polymeric layer comprising at least two different polymeric species ... the polymeric species being selected from the group consisting of...". Claim 1 clearly requires two components for the barrier component. Claim 13 only recites two components, one of which has no antecedent basis in claim 1, which the barrier components are recited to *selected* from. Therefore it is unclear how one would select from two components when two components are required. It is assumed applicant either intended to recite "in which *one* of the complementary species of the barrier component *is* selected from polyvinyl alcohols and polymethyl vinyl ether/ maleic acid copolymers" or "in which the

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complementary species of the barrier component *are* polyvinyl alcohol and polymethyl vinyl ether/ maleic acid copolymers". For the purpose of examination the examiner will interpret claim 13 to comprise the limitation "in which *one* of the complementary species of the barrier component *is* selected from polyvinyl alcohols and polymethyl vinyl ether/ maleic acid copolymers" since this recitation involves actual selection of a component and best conforms to the Markush group format set forth in claim 1. Appropriate clarification is required.

Claim Objections

7. Claim 13 is objected to because of the following informalities: Claim 13 recites "polymethyl vinyl ether/ malefic acid copolymers". The examiner believes applicant intended to recite "polymethyl vinyl ether/ maleic acid copolymers". Appropriate correction is required.

Claim Rejections - 35 USC § 102/103

8. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

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9. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

10. Claims 1-3, 6, 7, 11 and 13 are rejected under 35 U.S.C. 102(b) as being anticipated by Maruhashi et al. U.S. Patent No. 5,106,890 (hereafter referred to as Maruhashi).

11. Claims 4, 5, 8-10, 14 and 15 are rejected under 35 U.S.C. 102(b) as anticipated by or, in the alternative, under 35 U.S.C. 103(a) as obvious over Maruhashi et al. U.S. Patent No. 5,106,890 (hereafter referred to as Maruhashi).

12. Maruhashi teaches a film prepared from a composition comprising polyvinyl alcohol, a starch and a crosslinking agent having excellent water resistance. (Col. 1, lines 5-10) Examples of starches include carboxymethyl starches and hydroxyethyl starches. (Col. 3, lines 11-14) Maruhashi recites that the degree of polymerization of the polyvinyl alcohol is from 300 to 10,000 (M.W. 13,200 g/mol- 440,000 g/mol) preferably 1,000 to 6,000 (M.W. 44,000 g/mol- 264,000 g/mol) In order to further improve water resistance of the film Maruhashi teaches admixing of the polyvinyl alcohol and starch component with a crosslinking agent. (Col. 3, lines 43-45) Any compound can be used as the crosslinking agent in the invention of Maruhashi so long as the compound can react with any reactive groups in the polyvinyl alcohol and the starch to intermolecularly form a crosslinked structure. (Col. 3, lines 46-50) Once the

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composition is formed into a film, post treatment such as wherein the film acetalized or a treatment wherein the film is coated or laminated with a hydrophobic resin can be conducted. (Col. 5, lines 51-56, claim 6) Hydrophobic resins such as vinylidene chloride and polyethylene are recited to be useful when a polyvinyl alcohol starch film is used in an application requiring water resistance. (Col. 1, lines 47-53) The films are recited to be useful a films, bags, containers or vessels for wrapping or packaging foods or textiles. (Col. 6, lines 1-4)

13. Regarding claims 1-3 and 13: Maruhashi clearly recites a hydrophobic base resin coated with a polyvinyl alcohol/carboxymethyl starch or hydroxyethyl starch interpenetrating physical network barrier component (Maruhashi's intermolecular crosslinked structure) as claimed in claim 1 for use as a package or container as claimed in claim 2. The recitation in Maruhashi of containers or vessels is reasonably broadly interpreted by the examiner to read on the bottles and jars recited in claim 3. The composition comprises polyvinyl alcohol as claimed in claim 13.

14. Regarding claims 4 and 5: One of ordinary skill would immediately envision that the barrier material recited by Maruhashi could be utilized on the interior or exterior or a container depending on what side required barrier properties. Therefore, Maruhashi anticipates the limitations of claims 4 and 5.

15. Regarding claims 6 and 7: The barrier film recited by Maruhashi would be expected to exhibit electrostatic and covalent bonding to the hydrophobic base component recited due the attraction of the film for the base component and the presence of the crosslinking agent in the film.

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16. Regarding claims 8-10: Maruhashi clearly recites utilizing hydrophobic materials such as polyvinylidene chloride as a base material to protect the polyvinyl alcohol/starch material in applications requiring water resistance. One of ordinary skill in the art would have immediately envisaged a sandwich structure comprising exterior layers of polyvinylidene chloride and an interior layer of the polyvinyl alcohol/starch composition recited. Alternatively, it would have been obvious to one having ordinary skill in the art at the time the invention was made to have provided the polyvinyl alcohol/starch film in a sandwich structure between two layers of polyvinylidene chloride in order to increase the water resistance of the container produced. This obvious modification would have produced the invention claimed in claims 8-10.

17. Regarding claim 11: Maruhashi recites polyethylene as a hydrophobic base material and the use of the film in containers. Therefore a polyethylene container coated with the film of Maruhashi on the outside reads on the polyethylene bottle comprising a barrier component recited in claim 11. Regarding the intended use limitation recited in claim 11 of “a bottle for use in the bottling of carbonated drinks or beverages” a recitation of the intended use of the claimed invention must result in a structural difference between the claimed invention and the prior art in order to patentably distinguish the claimed invention from the prior art. If the prior art structure is capable of performing the intended use, then it meets the claim. In the instant case, a container such as recited by Maruhashi would be capable of containing a carbonated beverage and therefore meets the limitations of claim 11.

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18. Regarding claims 14 and 15: The polyvinyl alcohol recited by Maruhashi is disclosed to have a molecular weight which anticipates the molecular masses claimed in claims 14 and 15. One of ordinary skill would have immediately envisioned matching the molecular weights of the polyvinyl alcohol and starch components in order to facilitate mixing of the components. Alternatively, it would have been obvious to one having ordinary skill in the art at the time the invention was made to have optimized the molecular weight of the starch component of the composition in order to achieve the best crosslinking between the components and thus the most beneficial barrier properties. This obvious optimization would have produced the invention claimed in claims 14 and 15.

Claim Rejections - 35 USC § 103

19. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

20. Claim 16 is rejected under 35 U.S.C. 103(a) as being unpatentable over Maruhashi et al. U.S. Patent No. 5,106,890 (hereafter referred to as Maruhashi).

21. Maruhashi teaches what has been recited above but is silent regarding activation of the hydrophobic substrate material.

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22. The examiner takes official notices that plasma treatment and flame treatment are universally known in the laminate arts to increase adherence between two polymeric layers. It would have been obvious to one having ordinary skill in the art at the time the invention was made to have plasma or flame treated the hydrophobic resin layer recited by Maruhashi prior to application of the barrier film recited. This obvious utilization of a technique for improving adhesion well known in the art would have produced the invention as claimed in claim 16.

Response to Arguments

23. Applicant's arguments with respect to claims 1-11 and 13-16 have been considered but are moot in view of the new ground(s) of rejection.

24. The examiner notes that the header on the top of the remarks and claims pages submitted by applicant on 4/9/09 states "In re Patent Application of: Gueller et al. Serial No. 10/381555" This is incorrect and should be removed in the future to avoid any confusion in the filing of applicant's submissions.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to MICHELE JACOBSON whose telephone number is

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(571)272-8905. The examiner can normally be reached on Monday-Thursday 8:30 AM-7 PM EST.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Rena Dye can be reached on (571)272-3186. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

Michele L. Jacobson
Examiner /M. J./
Art Unit 1794

/Rena L. Dye/
Supervisory Patent Examiner, Art Unit 1794